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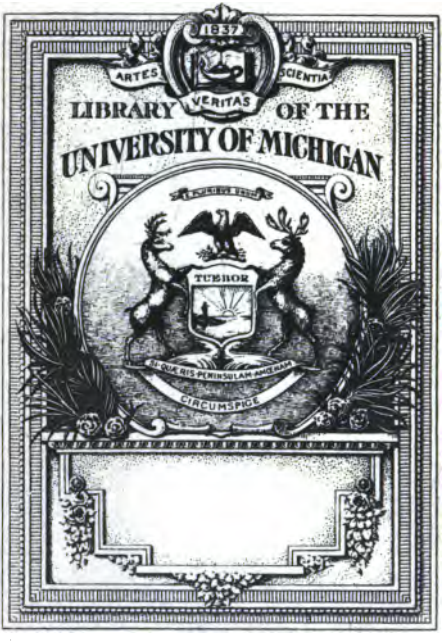

THE GIFT OF
Dr. H.C. Westervelt.

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Jr. H.C. Westervelt

MIND, MATTE

AND

MOTION

WITH DIRECTIONS

FOR GOOD HEALTH IN OLD AG

BY

ADAM MILLER, M. D., Ph. D.,

AUTHOR OF

"Life in Other Worlds,"
"Plain Talk to the Sick"
and "Mental Gymnastics

CHICAGO,
1896.

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PREFACE.

When sixty years of my life had passed away I felt that the infirmities of old age were gradually approaching.

An inclination to stoop and bend down, with a pressure on my shoulders, were indications that a great change was coming. I then resolved to throw off, if possible, this relentless oppressor of our mental and physical powers. I commenced some new scientific studies, and resorted to new physical exercises. Here I had to exercise my MIND and to deal with MATTER and keep in MOTION, and this suggested the title for my book: MIND, MATTER AND MOTION.

I do not contemplate mind in its metaphysical relation to all existing things, but view it as the intellectual or intelligent power in man, by which he arrives at conclusions which control his actions. I do not present matter in its strictly scientific relation to natural laws; but view it as it exists in its vari-

ous forms, and is brought from an inert condition into action, either by the infinite, all-controlling mind, or by the human mind, which changes its condition in an endless variety of forms.

A brief statement of some leading facts gathered from the store of nature will show some of the provisions the great creator has made to supply the wants of our race.

The sun, as the center of our solar system, is also the source of all vitalizing influences known to exist on our earth.

A constant supply comes floating down to us at the rate of one hundred and eighty thousand miles in a second of time.

If this supply was cut off for one hour, darkness would envelop the earth and all life would soon perish. We will, then, in our search for the cause of health and long life, look at this bright luminary from a scientific standpoint, as well as from the natural exhibition in the realms of nature.

There is no subject in the range of natural science on which so many different and conflicting theories have been offered as on the subject of solar

radiation and its remote or immediate cause. It now appears proper, in a discussion of a subject of so much importance as good health and long life, to notice with especial interest and care this life-sustaining center of our solar system. Here I will come in conflict with some of the great and wise men of the past and of the present time.

So far as I can judge, my mind is in a much better condition for the discussion of these subjects than it was twenty-five years ago. On the 22d of next January, 1897, I will be 87. I owe my mental and physical vigor, under the leadings of a kind Providence, to a careful course of training and an observation of the laws of life and health, which are especially referred to in the closing chapters of this book.

The APPENDIX contains especial directions to those who wish to avoid the deformities common to old age. These do not belong to the scientific part of the book, rather to those who MIND their own MATTERS and keep in MOTION.

THE SUN AN ELECTRIC LIGHT.

In my first study of this subject I was fully satisfied that the light of the sun was caused by electrical action, but by a more careful examination of the statements of the different authors who have written on this subject, and of the facts connected with solar action, I am prepared to advance one step farther and assert that the sun is, in itself, an immense electric light. It is not merely to be viewed as a light-house on the distant shores of a rock-bound coast, shedding its borrowed light to guide the mariner in his course, but as a central power house of untold energy, to hold and guide revolving worlds in their motion around this common center, and that this will finally be a recognized fact in science.

I am the more confident in this from the fact that, up to this time, no theory has been offered on which astronomers could generally agree.

In reference to this, Dr. Newcomb, in his "Popular Astronomy" (257), says: "It is remarkable that modern

science has shown us more mysteries in the sun than it has explained, so that we find ourselves farther than before from a satisfactory explanation of solar phenomena."

On page 287 Dr. Newcomb says: "No theory of the solar constitution which is free from some objections has yet appeared."

Professor Langly, the astronomer, says: "The most important statement with reference to the sun, perhaps, which we can make with certainty, is even a negative one. It is that we have no other than empirical grounds in the present state of knowledge for believing in the uniformity of solar radiation in prehistoric periods or in the future."

From such statements from two of the most popular astronomers of our country it must be admitted that there is a demand for something more certain on this subject.

A number of different theories have been offered, and in their turn rejected as untenable. The theory now generally received by astronomers is that the solar orb is now in a process of shrinking, and in this way it is sup-

posed that the light and heat of the sun are produced, but this is not regarded as a fact in science and is received only from a want of something more in harmony with scientific facts.

Now, since electricity has come to the front as a great working force in nature, we may look at this as the most probable cause of solar energy and activity. This giant power is governed by certain laws, which we can study, and from which we can make certain calculations, and thus arrive at scientific conclusions. The matter thrown out from the sun, as revealed by the telescope, is the result of magnetic repulsion. Now, we appeal to facts revealed through the telescope, and here we learn that an immense amount of matter is constantly thrown out from the sun, and this is regularly returned by the sun's attraction. This cannot be accounted for by the shrinking of the sun, but it can be accounted for most clearly by the different electrical conditions of these particles of matter. By the immense magnetism of the sun, they become positive, and, consequently, are repelled, as a positive repels a positive. When they are pushed

out from 200,000 to 300,000 miles their positive electric condition is changed to a negative condition, and then they are attracted by the sun, and return with an immense force, and by this repeated contact with the surface of the sun, develop immense currents of electricity.

Here there is no waste of energies, for the boundless store of electricity cannot be wasted. Here we will find the master key that will unlock the mysteries that have surrounded this subject in the past.

A distinguished astronomer says: "The true explanation is reserved for the science which shall reveal the nature of the connection which unites heat to electricity, to magnetism and to the cause of gravity." This we have in the theory here presented, and the truth that forces itself upon us is that the sun itself is an electric light on an enormous scale, and this is kept up through all the ages by magnetic repulsion and attraction of cosmical matter, according to electric conditions.

This bombardment constantly going on on the surface of the sun is a scientific fact, demonstrated by obser-

vations through the telescope and not a theory guessed at to be set aside by another guessing in another direction.

New theories should not be rejected on the ground that we find nothing in the books in harmony with them. If they will stand the test of logic without sophistry and of fairly conducted experiments without jugglery or deception, we should accept them, even if we are compelled to abandon old theories and number them with erroneous theories of our ancestors.

The bright, shining surface of the sun which we see with the naked eye is the photosphere which appears perfectly smooth and uniform, but the telescope reveals a constant state of disturbance on the surface of the sun, and these down rushing of and upheavals of electric storms, exceeding by a thousand fold all the cyclones and tornadoes ever witnessed on this earth, can only be accounted for on the theory of electrical action.

The spots seen on the surface of the sun through the telescope can be nothing less than immense chasms through the photosphere, caused by these storms.

We need only advance along this line, step by step, and with facts that cannot be denied, and we will finally arrive at conclusions to which the most advanced science of our times can offer no objections.

Dr. Newcomb says: "The great question in the present state of science is how the supply of heat is maintained against such an immense loss by radiation."

Well, we may now proclaim that we have found the ever-flowing fountain, streaming out from every star and every world throughout the universal empire—enough to supply all demands for millions on millions of years.

All other theories point to a waste of energies that foretell the final doom of nature; but electricity can never fail. It has in it the elements of perpetual motion. It manifests a power that is sui generis. It works for humanity in thousands of forms, from the sewing machine up to the locomotive drawing a train of passengers.

It carries a message of friendly greeting to the different nations of the earth and passes around the world in a few minutes.

It submits to the restraints of the human mind and will, yet outside of these restraints its power is boundless and yet under the control of a higher law, working out the designs of an infinite mind and will.

The late Professor Tyndall says: "When the history of the dynamical theory of heat is written, the man who, in opposition to the scientific belief of his times, could experiment, and reason upon experiment, cannot be lightly passed over." If I am mistaken it is proper for some of the wise men of our time to correct the error. If I am correct they should give encouraging testimony to the truth of this theory.

HOW THE EARTH IS WARMED BY THE SUN'S RAYS.

The fact has been strangely overlooked that sunshine possesses properties different from the light produced by the ordinary combustion of terrestrial material substances. By a due consideration of this the mistakes already referred to could have been avoided. Then, as has already been

stated, heat is not an independent existing thing. Its existence depends on mechanical or chemical action, and it cannot pass through cold space and retain its existence without a reproducing cause. The fuel stored in our vaults or places of deposits, to warm our dwelling places or run our machinery, contains the elements from which heat is produced, but this can only be accomplished when the fuel is subjected to the chemical action called combustion. Then the heat is produced.

We cannot say that the heat is latent in the fuel, neither can we say that light is latent in the candle before it is lighted. We might as well claim that there is latent ice in hot water, as to say that there is latent heat in cold water or a latent mountain in a mole hill.

The process by which cold things are made hot in the ordinary course of nature is generally understood, but the process by which our earth is warmed by the sun's rays is not generally understood, and hence the many conflicting theories on this subject. The latest, and now most generally re-

ceived theory, by astronomers, is that the immense solar orb is shrinking, and that by this process of contraction it is producing an enormous quantity of heat, which is radiated into space from this common center, and of this only a small fractional part reaches the planets, and by far the greater part is a prodigal waste in boundless space.

Now, if heat is regarded as an energy in nature, and if, according to the materialistic theory, all energies are conserved and indestructible; where and how is this radiated heat conserved? We might as well claim that sunshine must be conserved or stored in some dark place to be utilized for other work in the future. This would be about as unphilosophical as Professor Balfour Steward's theory of a great waste heap somewhere in the universe where heat is stored away to burn up everything in the distant future. This theory of an eternal indestructible energy as the ruling power of the universe has caused endless confusion and led to conclusions that cannot be made to harmonize with true science.

But again, we will look at facts that

cannot be denied in reference to solar heat, as it manifests itself on our earth.

Rays of light from the sun, passing from a rare to a denser medium are refracted, and diverted from their natural course. A double convex lens brings the rays together at a focus where the friction of these crowded rays will produce a burning fire. A concavo convex lens will produce a milder form of light and a less degree of heat. This is the condition of our atmosphere. It is denser than interstellar ether and concave inside and convex outside, and the density increases as we pass from the outer to the inner side. Hence, the sun gives us more heat in lower than in higher regions of the atmosphere. At the outer rim of our atmosphere the cold is so intense that no life, such as is known on our earth, could possibly exist. Even on the highest mountains in tropical climates no vegetable nor animal life can exist. They are covered with perpetual frost and snow. When the rays of light first strike our atmosphere they are diffused and there is a glow of light in all directions. As these rays descend they are refracted

by the lens' action of the atmosphere, and this increases till the earth is reached; then the amount of heat is governed by the angle at which the sun's rays strike the atmosphere. In the winter the rays strike more obliquely, and the refraction is diminished, while in the summer they come nearer the perpendicular and we have more heat, although we are three millions of miles farther from the sun in July than we are in January.

Some recent writers have told us that the heat is in the sun's rays, but that it cannot manifest itself until it comes in contact with some hard substance, such as the earth, and then it is produced by a concussion. This untenable theory meets its own refutation in the fact that these rays of light fall on the vast mountain ranges with equal force as on the low lands, and there is no heat knocked out of them in those high altitudes. Again, if the heat from the sun was produced by this concussion we would have a more uniform temperature in the different seasons of the year, for it must be presumed that the sun's rays strike with equal force always.

Among the strange theories advanced on this subject is that by Professor Tyndall, that "one-half of the heat from the sun is kept from the earth by the aqueous vapors of our atmosphere."

Now, it can be demonstrated that this aqueous vapor in our atmosphere is one great cause of the heat we receive from the sun. To demonstrate this I have constructed a water lens, and after passing the rays of light through several inches of ice cold water I can produce a burning at the focus without changing the temperature of the water through which the rays of light pass. By constructing a concavo convex lens, resembling the form of our atmosphere, and putting cold water between the outer and the inner glasses, and by allowing the rays of sunlight to strike this obliquely, the thermometer goes down and by turning it toward the sun the thermometer rose 18 degrees on a cold winter day in a cold room and the sunlight coming in through a frosted window. To one who depends on facts to establish a theory, it is amusing to hear the wild conjectures of one who only guesses

at things on which to build a theory.

A lecturer in Chicago on astronomy, some years ago, while endeavoring to explain the nature of heat from the sun said: "I would fear to tell you the terrible condition our earth would be in if the atmosphere did not keep off from us a great part of the sun's heat." This man should have known that if we had no atmosphere to change these electric rays into heat rays, no life could exist on our earth.

From this theory we learn that changes of temperature so common in northern climates must depend on atmospheric changes. We certainly cannot think that the sun's rays are warmer on one day than on another, but we are compelled to admit by undeniable facts and by the sternest logic of events, that the changes of temperature are caused by atmospheric conditions. These are not to be regarded as chance happenings or accidents in nature, but the results of an operation of natural laws established by an infinite power.

THE CONDITIONS OF MATTER AND THE ORIGIN OF HUMAN LIFE AND MIND.

Matter exists under an endless variety of forms and conditions, such as solid, fluids and gases, ponderable and imponderable, visible and invisible, in simple elements and compounds; yet in all these combinations and changes its primal elements remain unchanged. The identity of a particle of matter cannot be destroyed by transformations or transmutations. Whatever may be said of the inherent energy, or molecular motion, the one great truth remains, that inorganic matter is inert, and cannot transfer itself from one position or place to another. It can only move when it is acted upon by a force outside of or above itself, or by a life within it.

Now, as we see inorganic matter in motion in every direction, we must conclude that it is under the controlling influence of some power from outside of itself, or some chemical or mechanical force within, not natural to it, to which it must submit without a choice or will of its own.

We also see matter controlled by a life within it, growing from small to large forms in the different departments of animal and vegetable life. Here the question comes up with peculiar emphasis: Whence came this first impulse to move matter from the outside or this life that moves and controls it from within? Back of these there is another important question: Whence came these helpless and inert forms of matter in their endless variety? Again, did matter produce itself, and then impart to itself the energy by which it was put into motion? And, finally, did this unconscious energy produce life and raise it from its lowest to its highest condition? These perplexing questions will continually come up before the mind of the speculative inquirers after the origin of things, without recognizing an infinite mind and an all-controlling power above nature. To the believer in the supernatural these questions are welcome messengers, coming up from the past eternity and the answer is at hand. Matter could not produce itself, and that life could not become connected with matter without a previous life and

life-giving power. This is now generally received as a truth in biology, all life must come from a pre-existing life. Matter was first dowered with motion and then with the power and conditions to produce life.

We need not seek to reconcile the Bible history of creation with the conceptions of modern materialistic science, or to make it harmonize with them, but will call attention to the history of creation as recorded in the first chapter of Genesis, verse 20: "And God said, let the water bring forth abundantly the moving creature that hath life, and the fowl that may fly about the open firmament of heaven." Again, verse 24: "And God said, let the earth bring forth the living creature after his kind, and cattle and creeping things, and beast of the earth after his kind, and it was so." It is also stated in this connection that God CREATED these things. The word creation does not necessarily imply the making of something out of hand without the employment of secondary causes. It is often used to express a transformation or change from one condition to another.

In the account given in Genesis we have, first, a preparation of the water and the earth, for the support of life, and then the vitalizing principle imparted to these elements, and by this they were dowered with the power to BRING FORTH the different forms of life. We cannot account for this on any other principle than the designs of an infinite intelligence, executed by an Almighty Power.

This gives to us a more exalted view of creation than the theory guessed at by evolutionists, that there were a few prime-ordeal germs from which the different conditions of life came, by a process of evolution, including the human race. Where, in all literature, will we find a more rational account of the beginning of life than here.

This relieves us from the childish fancy that God, by some mechanical process, made all the different animals separately. He made the conditions for their existence and arranged the material for their nourishment, and by the power of his word and will they were "BROUGHT FORTH," so that in the highest sense he is the creator

of all things. In this connection we notice that the creation of man was by a different process, and any effort to place man's origin on the same level with the lower animals indicates a disbelief in one of the fundamental doctrines of theology. It is the denial of a power above nature and a rejection of the supernatural.

The recognition of the infinite and controlling power is the only postulate on which we can build a rational theory of the origin of life and the constancy and course of the universe.

The aim of modern science now is to admit some theological ideas, such as they can bring in harmony with their atheistic conception of cosmogony, and to form a new system of religion that will reject all ideas of the supernatural.

A careful study of the relation of different parts to one immense and harmonious whole, will naturally lead the thoughtful mind in the direction of the supernatural, a power that is not inherent in matter, nor produced by natural laws.

A materialistic philosophy objects to the word supernatural and claims

that all the operations are carried on by a natural process.

A moment's reflection and thought of our surroundings will show the error of such conclusions. Our houses do not build themselves. Machines do not put themselves in operation. Our garments do not make themselves, and the thousands of comfortable things that come to our needy would all come through instrumentalities that are above the operation of mere natural laws. When rough materials are formed into a beautiful dwelling-place we know some mind has ordered it so.

HOW TRUTH MAY BE FOUND.

The safest way to find truth, when it is surrounded with numerous errors, is to test theories by experiments in such a manner as to make mistakes impossible. This is the only way in which we can pass from mere theories and conjectures to well-established facts in all branches of knowledge.

Many of the great and well-established truths in physical science were first advanced as theories, and when

fully demonstrated by facts they were classed as established science.

When new discoveries in art or science are offered, the first question should be: Can they be demonstrated by properly conducted experiments. If a machine is invented the question is: Will it perform the work for which it was designed? All things have their value or importance to the great store of scientific knowledge, through the result of fairly conducted experiments. Everything claiming to be a contribution to science that does not come within this range should be rejected. If this principle were strictly observed and everything erased from books that are published in the name of science that cannot be demonstrated, at least one-third of the writings of our times, on scientific subjects, would be rejected. This is evident from the fact that numerous contradictory and conflicting statements are made by different writers on the same subjects claiming to be scientific discussions, and generally without facts to sustain them, and yet these books are published as scientific discoveries.

I have made experiments in elec-

tricity which, according to the best of my knowledge, have not been made before, and the conclusion arrived at from them are of the most startling and important kind. If I am not mistaken, and I think I am not, our theory of cosmogony, in some respects, will be replaced by another. My theory is that gravitation is only one part of the controlling power in planetary motion, and that worlds are moved, held together and governed by the laws of magnetic attraction and repulsion, in connection with the general law of gravitation. If my theory is true, it is evident that it is one of far-reaching importance. I mention that the sun is an immense electric light, as stated in a previous chapter. The general storehouse of the solar system for electricity and that all celestial bodies move, not by the law of gravitation alone, but by the law of magnetic attraction and repulsion.

Newton saw one apple fall and received an impression in reference to the law of gravitation. Now, under favorable atmospheric conditions, when the atmosphere is dry and cold and the wind blows from the north I

can suspend an apple in the air in the following manner: I tie a string to the stem of the apple and fasten the other end of the string to a large sheet of paper, and then lay the paper on my desk or press it against the wall, and by passing my hand over it, in a half a minute I will produce electro magnetism enough to hold an apple suspended in the air.

I can then, by electro-magnetism, make the apple, or any other substance suspended in the air, move around on its axes from east to west or from west to east, without any visible force coming in contact with it, and reverse these motions at my pleasure by causing a magnetic current to pass around it.

Again, I can take two large sheets of paper, of equal weight, say ten to fifteen grains weight, the one electrified and the other in its natural state. The one with the electricity will fly up and adhere to something above it, while the other will fall to the floor.

Now, if the motion of a surface four inches square will cause fifteen grains in weight to fly in opposition to the laws of gravitation here on earth, where electric currents are interfered

with by the aqueous vapor of the atmosphere, what may we expect from the motion of the sun and the planets through ether space, where there is no such interference and where the surface producing friction is almost beyond the reach of mathematical calculation? I have, under favorable atmospheric conditions, produced magnetic attraction in a half a minute, strong enough to hold a pound weight suspended in the air.

I assume that electricity is an entity in nature, and not merely the result of chemical or mechanical action. The manifestations of this giant power are too strong and multifarious to admit that they are only the result of other and inferior agents. These only serve to bring this pre-existing entity into active operation.

Here we have undeniable facts, arrived at by carefully conducted experiments, and not merely by guessing that these things might be so.

We should look at nature as a great school, where the object lessons are atoms, and worlds, and suns and stars. We should give heed to their instructions with profound attention and

gather up every fragment of truth scattered over these boundless fields, and from them learn all that is allowed for us to know of that infinite power that rules and controls the whole. In one sense

"All matter is God's tongue;
Out from its motions God's thoughts are sung;
And the realms of space are the octave bars,
And the music notes are the sun's and stars."

These tones are not heard by mortal ears, yet we see them "leap into space from a thousand choirs" to sing the epic of the starry heavens.

Facts in science that can be demonstrated as such point in the direction of a supreme ruler of the universe, while the speculations of modern science point in the direction of atheism and the final failure of nature's energies.

COMBINED FORCES OF NATURE.

In every part of this vast universe, in the great or in the small, we see evidences of an all-controlling mind.

The lines of force, originating in the Infinite Power, move out as instruments in the hands of this Power, which acts on nature through the operation of changeless laws, and not by an uncreated energy that is hastening to its final doom.

This, however, brings to the border line of mysteries beyond which we cannot pass; but the mystery is more profound by the assumption of an eternal unconscious energy than in the recognition of an eternal intelligent Power. If we are forced to admit that by the operation of natural laws many things occur that cause human suffering, we must also admit that by the operation of these same laws multiplied thousands of things come to us that satisfy our wants and especially contribute to our happiness of body and mind. When it is said, "The Lord sendeth his rain upon the just and upon the unjust," we are not to believe that by some supernatural power he formed the clouds and put the water into them and then caused them to pour out their contents upon the earth. There are numerous intermediate forces, each performing a

separate part in this process of bringing rain. There must be the lifting power of the sun's rays to take up the water; the formation of the clouds; and the power of the atmosphere to sustain the clouds, and the wind as motive power to propel them onward in their course; and finally the power of gravitation to bring the rain from the clouds to the earth.

Among the great working forces in nature we find electro-magnetism and repulsion.

There is a pull and a push throughout the vast empire of matter. Electro-magnetism plays an important part in these strange phenomena. While making some experiments along this line I was myself surprised at the results, so that I concluded to make a record of them to illustrate my views. But fearing that I might be charged with an exaggeration from an excited imagination I called at the office of my friend, Dr. Cady, a prominent dentist. I told him I wished to explain the flight of birds through the air. I had with me a bunch of duck feathers, and laid them on the table. I then told the Doctor I would make a few

passes with my hand over a sheet of paper, not stronger than the motion of a duck's wing striking the air. When I held this paper from four to six inches distant over the bunch of feathers they immediately flew up and fastened themselves to this paper at one end, while the other end stood at right angles from the paper, quivering and shaking as if some power was pulling them to get them away from the paper; and so it did, for a number of them were pulled off and immediately fastened themselves to something else in another direction. I then turned the paper around while these feathers were standing on one end and the other end trembling in the air. I then passed my left hand under the paper some distance from the paper, and with every motion of my hand they would jump and crawl over the paper like living things in rapid motion.

Dr. Cady was so deeply interested and so highly delighted with the experiment that he said, "It is too important for me to witness it alone," and called in his friend Dr. Newman, before whom I repeated the experiments.

I explained to them that electro-magnetism was produced by the motion of the wings like I produced it by the motion of my hands, and this is the reason why large fowls or birds sail through the air with such apparent ease. I have made numerous experiments of this kind to show the intimate relation between vital forces and electro-magnetism, and will make more definite explanations further on. I only here refer to the universal law of electro-magnetism and its controlling influence over moving bodies. One law in physical science is that experiments made on a small scale will illustrate what can be done on a large scale. The difference is not qualitative but only quantitative.

The small portion of the power of electricity now employed in machinery and for light and heat and running trains for traffic and travel, can give us only a limited idea of its power in holding and guiding suns and worlds, as they move in their endless circuits through boundless space.

If gravitation acted alone on these celestial bodies without the counteracting and controlling influence of elec-

tro-magnetic repulsion, suns and their satellites would be drawn into a solid mass and wreck and ruin would be the final doom of all revolving bodies.

This is no idle dream of the imagination. It is a truth that comes within the range of human knowledge and scientific demonstration; and becomes more clear as we advance in our investigation of the nature of electricity, and its influence in the government of the physical universe.

Electricity performs an important part in producing the light of the sun and conducting these rays of light through inter-stellar ether space to the different planets and their satellites.

Electricity pervades all ether space, penetrates all substances, and, like a slumbering giant, only waits to be called into activity by some dynamic power, when it will show its strength in the work it is directed to perform.

Scientific investigation gives daily new evidences of the extent of this power in Nature. It runs out along a slender wire, by which it is conducted to the car wheels, and they move like living things with the crowds of passengers, through the city.

How few of us realize the fact that while we are passing to or from our daily toil or seeking amusement or pleasure in riding on these electric cars that we are all on board of a more magnificent train—this earth. This wonderful chariot of the sky, in its journey around the sun, moves over sixty-five thousand miles in an hour without a danger of coming in conflict with the other numerous bodies moving around the same central sun.

According to the knowledge we gain by experiments on a small scale, we are led to the conclusion that these revolving planets in their rapid movement through space must be centers of power to evolve electro-magnetism to an almost unlimited extent.

If the planets are an offspring from the sun, as the Nebular hypothesis claims, we may naturally conclude that these circling orbs may contribute their part in supplying the grand old luminary with materials out of which sunshine is made. This would be an illustration of the corelation of force; but by no means a proof of the eternal equivalents of forces, according to the materialistic conceptions.

This corelation between the sun and the planets gives us a more rational view than the old theories of the sun consuming cosmical matter, and then to meet an inglorious ending when all the meteoric showers are consumed by a process of combustion. It is also opposed to the later theory that the light and heat of the sun are kept up by the shrinking of the sun.

This shrinking theory must finally yield to the demands of advancing science.

All theories hitherto offered on the cause of solar heat, and radiation, imply a waste of energies and the final destruction of the solar orb, and consequently an eternal night on all of the planets where the existence of life is possible. The same destiny would await all the sun systems in the universe. A gloomy picture, painted in the imagination of the atheist, who says in his heart, "there is no God." If the theories referred to were true these gloomy conclusions necessarily follow. But there is no proof to sustain them. The sentiments of some of the greatest and best men that ever lived are against such a disastrous end-

ing of a system of worlds, where every particle and form of matter give evidence that they are the product of an infinite intelligence.

With such views we need not be disturbed in reference to the future progress of this great universal empire of matter. The changes that have taken place in the past, so clearly indicated by geological research in material nature, and the condition of things may be regarded as prophesies of changes to come in the future, and these will more likely be changes from a lower to a higher condition, than a falling back to decay and final destruction. Nature, in her progress, has a voice of encouragement to those who look into the future, and contemplate her extended fields with confidence and hope.

Should any of the old pass away the promise is, "behold I make all things new." "There shall be a new heaven and a new earth." If we take an imaginary journey through space, and view the motion of planets around their central suns and reason from our knowledge of terrestrial electricity and magnetism, we learn important les-

sons. We know something of the power of attraction and repulsion that may be produced by electrical action on a small scale, and by calculating results from increasing magnitudes we may form some idea of the dynamic power produced by the revolution of celestial bodies. If we view the sun as in a highly charged electric condition, and this condition maintained by the action of surrounding globes as dynamos of immense power and exhaustless resources, we need have no fears of the final ending of this solar system from a want of light and heat. The planets that are moving around the sun in their orbits and whirling around on their axes are not there as mere dumbbells for the amusement of astronomers, who calculate their distance, magnitudes and periods of revolution.

They are there for a purpose, and are held in the mighty grasp of the sun's attraction to keep them from wandering into unknown space, and they are kept from falling into the sun by electric repulsion, and these two balancing forces hold them to their work and guide them in their orbits.

Whatever different stages the sun and the solar system may have passed through in the process of rising from a chaotic mass of formless matter to its present condition, by the operation of natural laws, the devout astronomer, the Christian philosopher, as well as the most humble dweller on this earth, who recognize the supreme Power, will attribute all these operations to this ultimate Power.

The conclusion we arrive at is that the sun itself was formed by a union of different parts and qualities of matter.

It was then dowered with powers and energies to act on other parts in the great drama of creation.

The unity of matter, in its different elements, as revealed by the spectroscope, presents a strong argument in favor of the unity of origins.

From every star and from every world where light has come to us we have proof that the same elements contained in our earth are also found in those distant worlds. All existing things must have their origin in an eternal intelligent existence.

We are led to the conclusion that

while matter has been tending to changes it has also been blending with higher forms and more beautiful combinations corresponding with the progress of human minds and human skill. Every globe or revolving body must necessarily have a magnetic center around which the materials are attracted to build it up to its destined size.

Outside of, and apart from, an intelligent cause, we can find no answer to the question how these magnetic centers found their proper location in space, to move in harmony with other large globes revolving around one common center at different distances and well-defined periods of time. That these magnetic centers do exist, to which materials are attracted for world building, is a fact that can be demonstrated by a scientific process of reasoning.

The theory, based upon the Nebular hypothesis, that parts were thrown off from the central mass, out of which worlds were formed, cannot be reconciled with the laws of gravitation alone. Neither can the axel or orbital motion of the planets be brought into

harmony with these laws as published by Newton, and now generally recognized as true.

Here we have to deal with attraction and repulsion. While parts of matter are drawn in one direction as a positive draws a negative, another part is repelled, as a positive by a positive. These laws of positive and negative attraction and repulsion are universal in their nature. On them the variety and harmony and stability of the universe depend. We see this law manifested in the growth of trees, their leaves, and all things throughout the vegetable kingdom, in blades of grass, leaves of plants and buds and flowers.

We seldom, if ever, see a perfect circle in nature. The planets move in elliptic orbits around the sun. Every shape and form of matter gives evidence of this attractive and repellant force in nature. The irregularities in formation seen everywhere show that there are antagonizing forces that work everywhere, producing variety as well as harmony and beauty. Nature wears her garments of many forms, as well as of many colors, and

challenges our admiration in her variety, as well as in her harmony. These working forces have their home in the sun as the great central power of our solar system.

The nature and the effect of the sun's rays of light give unmistakable proof that they are not the product of the ordinary combustion of cosmical matter. Neither can they be the result of the sun's shrinking upon itself. They are dowered with a vivifying power found nowhere else in nature. Shut them off from any part of the earth and there is darkness and death. Let them have an unobstructed influence, and life and activity spring up under the magic touch of the sunbeam.

In this vast storehouse of vitalizing forces we see a coming and a going, a pulling and a pushing, an expansion and contraction, a rising and a falling; not in dire confusion, producing horrid and unsightly forms and deadly poisons, but fragrant flowers, with beautiful colors, and birds with beautiful plumage.

All these things come from the operation of laws established by an omnipotent Power.

Theism claims that this all-controlling power existed before matter appeared, and before life was in any way connected with matter. Atheism is compelled to acknowledge these phenomena of existence, and with scalpel and microscope in hand, and by chemical tests seeks for the origin of life in matter; and the origin of matter in an unconscious, unintelligent eternal energy; but this effort finds its utmost limits in mysteries incomprehensible.

CARE FOR THE HOUSE WE LIVE IN.

The marvelous structure of the human body is composed of the same material that is found in nature everywhere. Among these are Oxygen, Carbon, Hydrogen, Nitrogen, Calcium, Phosphorus, Potassium, Sulphur, Chlorine, Sodium, Magnesium, Iron, Fluorine.

These elements are arranged in their proper order to build up this dwelling place for our higher and moral nature.

The dweller in this temple of so many compartments is endowed with voli-

tion, and to a certain extent of exercising a watchful care over the different parts of this dwelling place.

No organic system is so wonderfully arranged as the human body. If we look with care at the different parts and their different functions we will be led to the same conclusion we arrive at when contemplating nature in her adaptation to the wants of the human race

"There's an infinite presence everywhere,
And it beats like a pulse on each globe of air,
There's infinite will from an infinite cause,
Which twines throughout nature's harmonic laws."

In looking at some of the prominent parts of this wonderful system we will especially notice the nervous system. These lines of intercommunication have been laid with a master hand, and to a certain extent they are in our care, and we become responsible for their normal action. Nothing in the whole animal economy is so complex and so wonderful in its operation as this. All animals, except, perhaps, some of the lowest forms, are supplied with nerves

of motion and sensation, but the complexity increases as we ascend from the lower forms of organic life, and with this increase the susceptibility to impressions from external surroundings, as well as from internal disturbance, also increases. It is only in the higher classes of animals the nerve power can get such a control of the muscles as to force them from their natural position and functions and produce the condition called spasms. A pig with its coarse nervous system, and a goose with its small brain, are not subject to spasms. The dog and the cat, with some other animals of a higher grade of nerve development, are more or less subject to spasms.

The more highly cultivated of the human race are more susceptible to a derangement of the nervous system than the uneducated and laboring classes. This comes from the fact that the brain and other nerve centers are often overtaxed by severe mental exertion, or disturbed in their healthy action by physical derangements and diseases, brought upon ourselves by our ignorance of the laws of our physical nature.

The nervous system is a telegraphic or electric apparatus of the finest structure and of the highest type and will act as a telephone or telegraph to any part of the system, and it requires constant care to keep it in a good condition.

The want of proper attention would soon render the best constructed telegraphic system useless. But how roughly do many treat these finely attenuated nerves. These proceeding from the brain and spinal column meet at way stations called ganglion. These are situated in different parts of the body, like towns and villages in a country. Into these the different branches enter like so many roads in a village. From these small centers they pass out, each one to the minutest ramifications, retaining their peculiar functions and performing the work for which they were intended. Among the marvelous things connected with the nervous system is their peculiar action along the different branches, according to impressions made upon the nerve centers by mental emotions.

A fit of anger may sometimes excite the whole system to such an extent

that reason is dethroned, and a man may, for a moment, act like a furious animal, beyond the bounds of accountability for his actions. In some instances a kind word affectionately spoken with a magnetic hand gently passed over the excited brain will allay the storm of passion; the clouds of anger will pass away and a moral sunshine will beam from the frowning eyes, till they are kindled into a glow of love and affection.

Excessive grief or joy, over which we may have no control, will often send a message along the line leading to the glands where the tears are secreted, and the little floodgates are opened, through which tears flow out in streams.

Hunger, in the presence of good things to eat, will send a messenger in another direction, and open the little water glands in the mouth, and "the mouth waters," and mysterious nature says to the tempting food: I am ready for you.

All parts of the body are under the influence of the nervous system, and by its action and reaction the body has its storms and calms. No one can

enjoy good health with a broken-down nervous system, and a healthy body is necessary to keep up a healthy condition of the nerves. Both should be under the controlling influence of a well-informed mind in reference to the laws of life and health.

We should depend more on our own good judgment to keep our nerves in a healthy condition than on the advertised medicines recommended for this purpose.

STRENGTH OBTAINED BY LABOR.

If the human race had been placed upon the earth and abundantly supplied with all needful things in food and raiment, without any demand upon our mental or physical exertions, the race would never have arrived at the high intellectual and physical standard that has marked its career through the past ages. With our present conditions and surroundings we are impelled by our needs to make exertions for our supplies in temporal things and our natural desire for

knowledge prompts us to exercise our mental powers for their improvement and our advancement in knowledge.

In all ages and among all nations, as a general rule, human happiness and prosperity have, in a great measure, depended on conditions within the reach of the great majority of mankind. The industrious and economical would prosper and secure to themselves pleasant and comfortable homes, while the shiftless and the indifferent would bring suffering upon themselves.

Before letters were invented and before books were written, the minds of men became interested in studying some of the great problems of nature.

After securing a comfortable dwelling place in some tent or cave the inquiring mind of primitive man engaged in those studies that had a tendency to direct his mind to a power above himself. Among the first and most important of these studies undoubtedly was the study of the stars.

The lonely traveler, or the dweller in his tent or cave, could look upon this vast volume of nature, and with wonder and adoration view these shin-

ing orbs in their apparent march through space.

The stars were regarded with a kind of veneration, and in some instances as objects of worship.

These studies, without books or charts to guide them, gave strength to the human mind, while labor for food and raiment developed the physical form; and thus by labor and toil the race became long-lived and strong. Thousands of lives have been shortened and many have gone to premature graves from a want of a proper exercise of their mental and physical powers.

Labor and toil, in the different fields spread out before us, are in harmony with our relations to a surrounding world of mind and matter; while a refusal to enter into these extended fields produces discontent, weakness, and premature decay. Work is the Divine order in the realms of nature and should be so in the realms of mind. The progress from low to higher conditions in the past gives us a prophecy of what is to come in the future.

When letters were invented and

the art of writing was gradually improved, and it was found that the conceptions of the human mind could be recorded so as to make them durable, and hand them down to coming generations, a system of astrology was formed. In this the stars were named and numbered, and formed into imaginary groups, representing human forms and animals, and various kinds of images suggested by the superstitious ideas of those early times. These were supposed to have a controlling influence over the destinies of nations and individuals, while some incorporated them in their religious worship.

This arrangement and grouping of the stars has come down to us from the dim and distant past, and the teachings of these ancient astrologers are, in some respects, adhered to by learned men in our advanced state of civilization and scientific research. Out of this system of astrology came the study of astronomy; but many centuries passed before a correct knowledge of the movement of the planets of our solar system was obtained.

Until the days of Copernicus it was believed that the earth was the center of the universe, and that the sun and the stars revolved around this immovable center every twenty-four hours. Copernicus exploded these erroneous views, and gave us the true system of revolving planets and their satellites around the sun as the center of our solar system.

Since his time and the invention of the telescope, great progress has been made in mathematical astronomy. Many things that were involved in mystery among the ancients have passed into the realms of certain knowledge under the teachings of modern science. The measuring line of the astronomer has been extended into boundless space, and distance and periods of revolution have been calculated with an accuracy that amounts to a scientific certainty.

All these efforts have given strength to the human intellect and dignity to human character and widened the line of separation between human beings and the lower class of animals. These remain the same through all historic ages, while man has been progressing

by labor and toil, and continued new discoveries indicate that the goal has not been reached, and the boundaries of human discoveries and inventions have not been passed.

The effort for a mastery over the mysteries of nature have been successful in many departments of knowledge. Yet there are large fields still open to inquiring minds. Some things, however, published as scientific discoveries ten or fifteen years ago, are now obsolete, while many others remain in obscurity, and the only purpose they serve is a matter of amusement to persons of progressive minds and advanced thought, who build their theories on verified facts.

Where there is a regular succession of facts, one hinging on another, as so many links in a great chain of truth, we must carefully examine the fundamental truth to be established, and in what way others are connected with the first link in the chain. Or, to use another figure, and look at it as ascending from lower to higher conditions, if we commence at the first round of the ladder on which we expect to ascend, and pass up step by

step to the highest pinnacle of human reason and human knowledge, and can prove that no defects can be found in any one of the steps on which we have ascended, we have a right to demand that our theory shall pass from the realms of hypothesis to the solid foundation of scientific truth.

THE LIMITATIONS TO HUMAN KNOWLEDGE.

We do not claim to understand the Power manifested in nature, nor the methods by which infinite designs are accomplished. Science may claim to understand the operation of natural laws; but even here our knowledge is very limited. We see natural phenomena and ascribe them to natural causes, and imagine we have done something in the way of illustrating nature, but we have only been playing with toys in the outer court of the great temple of nature, and cannot explain the process how things are done.

We know that when the rays of light flash out from the solar orb they rush through cold and dark space with an immense velocity, and make their

journey to our earth in about eight minutes, a distance of ninety-two and a half millions of miles.

Science accomplished something when it measured the distance of the earth from the sun and calculated the time for the sun's light to reach our earth. When it arrives here in exhaustless floods of bright rays science may attempt to explain the laws of solar radiation, but behind these explanations there are mysteries above human comprehension. Why does it travel so rapidly? What gives it this impulse? We cannot tell. No raging storm, in a clear sky, can turn a sunbeam from its course nor retard its speed. Its different beautiful colors blend into one bright and shining light, and these colors can only be seen when thrown apart by a refracting prism. Science, so far, has given us no certain information in reference to its source nor the cause of its exhaustless supply.

If we ask the most illiterate person we meet what it is, we will be told "IT IS SUNSHINE," and if we ask the philosopher the same question, he can tell us no more. IT IS SUNSHINE.

This is a truth known to all. But when science attempts to explain the origin and cause of this mysterious thing, its different colors and qualities, there are so many different theories advanced that no one can be received as a true statement of facts. Here all is uncertainty and confusion in the scientific ranks, and the deepest convictions of our moral nature force us to the conclusion that there must be an infinite mind above these strange phenomena.

We are told that such a Power is incomprehensible to human minds and cannot be admitted in scientific discussions. We might as well doubt the existence of the sun because we cannot comprehend sunshine. Or of heat because we cannot define it nor tell what it is.

I said to our hired girl one day when she was kindling the fire, "Mary, what is heat?" "Why," said she, "it is something that is made by the fuel when it burns." "But can't you tell what it is?" She replied, "It is something that makes us warm," and this is about all that the learned philosopher can tell us about it.

No machinery ever invented by human skill has run with such unvarying exactness as our solar system. The balance wheel of these natural motions must be under the control of an infinite mind. The tendency of our times to reject the supernatural arises from a conception of science which claims only to deal with nature under the operation of natural laws. This is all right so far as the purely scientific aspect of the subject is concerned. But the mistake of materialistic science is in the denial of the supernatural in the origin of things and the arrangement of those natural laws.

It does not require as great a strain on human credulity to assume that an infinite life and Power existed before matter was formed, as to believe that matter had an independent existence from eternity past, and that all life, with all the intellectual powers of philosophers and statesmen, are nothing more than the accidental outgrowth of some combinations of matter.

Are we to believe that the poems of Milton and the discoveries of Newton, with the wisdom of the great men

who have handed down their discoveries in art and science in volumes of the finest literature the world has ever known, are nothing more than transmuted bread and meat and potatoes, or some other food digested by human stomachs.

Human minds, with all their marvelous capacities, are not mere results of assimilation of crude substances by a digestive process. Mind must be traced to a higher source. The horse and the ox and the mule and the pig may all be fed on the same food that man lives on, and yet their brains have never arrived at the sublime conceptions of statesmen, poets and philosophers. As to their progress in music or the art of expressing themselves in words, there is not the least sign of progress. The horse neighs, the ox bellows, the mule brays, and the pig squeals, just as they did thousands of years ago, and yet the same particles of matter enter into their systems that build up the human system and produce the human brain with its marvelous powers.

Prof. Tyndall says: "Matter contains in itself the promise and potency of

all life." But whence came this potential energy, if it exists in matter?

If materialists could prove the spontaneous generation of some of the lower forms of life from peculiar combinations of matter they would gain nothing in their argument against a special creation. The question then would be: Did matter produce itself and impart to itself the power to produce life? There is a philosophical demand for a creative power and this we call supernatural.

Is it more difficult to believe that an infinite and eternally existing life produced all things, than to believe that nature produced itself; that all life had its origin in matter, and that all laws governing the universe, and all life, have resulted from a mere chance combination of molecular motion?

Where do we find the deepest mystery? Not in the conception of an infinite creator; but in the idea of an eternal unconscious energy without volition or a self-determining power. The believer in the supernatural does not call the accidents of blind chance his parents, nor the undirected move-

ment of molecules his brother or sister.

But the materialistic philosopher will tell us that natural phenomena are not the result of chance but the product of well-established natural laws. But, we may ask again, whence came these laws? Did they form themselves and put themselves into operation without a controlling power to direct them? This would be a mystery above all mysteries. On the other hand, if the materialist admits a primal intelligent power he must finally yield to the demands of the supernaturalist.

One day of bright sunshine should suffice to dispel the gloom of atheism from every reflecting mind. One thoughtful look at nature should impress every reasoning mind with the idea that the Power above us must have thought of us when all things were made—when the sun was made to shine upon our earth and become a storehouse of richest treasures for the inhabitants of the earth, although we cannot comprehend the process by which these things were accomplished.

We may be as ignorant of the ori-

gin of these things as the child in the cradle is of the materials of which the cradle is made. The child feels the motion of the cradle, sees the mother and hears the sound of her voice. These are simple facts to the child; but how the motion, sight and sounds were produced it does not know. It rests quietly in its little home until it outgrows it. As soon as it can reason from effect to cause every attempt to teach the child that all these things were matters of chance would be useless.

It knows that someone made the cradle, that some hand moved it and that someone produced the voice in the song.

We see and hear, sights and sounds and motions surround us in every direction, and is it not reasonable to believe that an intelligent Power moves above those strange phenomena in nature.

"The heavens declare the glory of God and the firmament showeth his handiwork."

So marvelous are the operations of nature and so uniform are the results produced that among all nations there

has been a deep impression that above these great working forces there must be supernatural Power.

Modern science, with its materialistic tendency, has made strong efforts to reject the term supernatural, even on subjects connected with theology.

Some of our theological teachers have already yielded an assent to these demands, and assert that all natural phenomena must be regarded as the result of natural causes; but it must be remembered that this nature which does such wonderful things is not a mechanism that produced itself, and put itself in motion. We admit that when nature was ordained to do a thing in a certain way it could do it in no other way than along the line of its own laws; but above these laws is the Infinite Mind and Will.

The teachings of the materialistic philosophy come in conflict with the deepest convictions of the highest order of intelligence when viewed in connection with natural phenomena. It is not the comprehension of mysteries that theology demands, but a recognition of the Power that controls them. The ancient patriarch Job was im-

pressed with this when he said: "Lo these are parts of his ways; but how little a portion is heard of him? But the thunder of his power who can understand?"

We know that the great center of our solar system is the instrumental cause of nearly all the physical energies that are manifested on our earth, and yet the devout heart gives thanks to the supreme ruler for the good things that come to us through these instrumentalities.

The wind that blows, from the gentle breeze, up to the desolating tornado, comes through the influence of the sun, combined with electric currents. The water that is held in the form of ice and snow is liberated by sunshine, and winds its way through small streams to rivers and from rivers to oceans, from which it is carried back again by the action of the sun's rays and formed into rain clouds to return to water the earth. This process will continue while the sun continues to shine. We may follow the workings of this central power through other forms of motion. The fuel in the furnace changes the water

in the boiler into steam. The power of the steam is transferred to the driving wheel, and the cars move with their freight and passengers over continents. The coal that burns in the furnace had its origin in immense vegetable growths in prehistoric ages, and this was produced from sunshine.

This is also true of all kind of fuel that grows on the earth, so that everything that runs by steam on land and water, and every spindle that whirls in every mill or factory, has the power of the sun behind it. The strength and physical power to work in man or animals may be traced to the same source.

We do not fully understand the vitalizing force of sunshine. These rays of light have forced themselves upon our attention by demonstrations of their power on animal and vegetable life. All plants seek the sun, and perish if they cannot find it. It stands at the head of all institutions in the material world for the supply of human wants and a contribution to the happiness of all the dwellers on this earth.

HOW TO REMAIN VIGOROUS IN OLD AGE.

My object is, not only to advance a theory on what may be accomplished, but to show what has been accomplished in extreme old age by a careful attention to our mental and physical energies. In the foregoing pages I have advanced some new theories to which I invite the attention of the learned men of our times. I ask no favors from critics on account of old age, for I could not have written this in my younger years. I have carefully studied the subject of mental as well as physical gymnastics, and have found that both are important to keep up the vigor of the body and the mind.

(See Appendix for explanations.)

My memory is now better than when I was a young man.

In reference to a lecture delivered in the First United Presbyterian Church, in Chicago, in the month of January, 1896, the Rev. W. T. Meloy, D. D., the pastor, in his paper, "Our Work," says: "Dr. Adam Miller's lecture was a very pleasant and profitable affair. He talked for an hour and a

half, and so interested all that heard him that the time seemed but short. The Doctor is only eight-six, and has a memory that is marvelous.

These things are only mentioned as an illustration of the truth of my theory, of the importance of a proper care for the preservation of life and health.

The recuperative powers of our physical organization are constantly at work to repair injuries and to carry materials to the injured parts and to supply the wastes that are constantly going on.

As there is an infinite mind that controls revolving bodies through infinite space, by the operation of natural laws, so this all-controlling mind has provided materials for the support of human life on this earth, and has left it to the care of an intelligent race to make a proper use of these materials; but among all the nicely arranged systems for doing important work, the human body in connection with the mind, have been the most abused and neglected, of all active forces in nature.

Whisky and tobacco, and an excessive indulgence in unwholsome food

and drink, and irregular hours of sleep and rest, are making fearful havoc with millions of the human race.

It does not require a knowledge of the technicalities of the medical profession to take a proper care of the body and the mind. Careful observation and experience are the best teachers along this line. Here is where the controlling mind over matter can be illustrated.

Man's physical organization is a part of nature, and is under the operation of natural laws, but these laws are often interfered with by the decision of the human will. The human stomach has a limited capacity for digesting food necessary to supply the wants of the body. When this is overloaded by excessive indulgence in eating, and then inflamed by alcoholic liquors, the digestive process is interfered with, and the nervous system broken down by the excessive use of tobacco, the structure finally breaks down and the dweller in this temple is forced to leave because it is no longer fitted for habitation, and the MIND determined it should be so.

Nature utters her voice of warning

to the violators of her laws. She has also words of encouragement to those who observe these laws. If we live in harmony with nature's laws we promote the health of the body and the mind.

NATURAL AND SPIRITUAL LAWS.

Natural laws govern the natural world, and spiritual laws govern the spiritual world. There is a marked line of distinction between these two governing powers. In the harmony of nature we see a law that governs unconscious and inert matter, which is absolutely free from any responsibility to the governing powers, and not subject to praise nor blame from the law-giver.

In the spiritual kingdom there is a knowledge of the nature and demands of the law which addresses itself to our spiritual nature, and implies volition, and consequently a responsibility to the law-giver. There is no similarity between the operation of natural and spiritual law. They have nothing to do with each other. When we look at nature in her harmonious

movements; atoms blending with atoms, then separating and reuniting in different proportions and qualities to form the endless varieties in qualities and forms, such as we find in matter; the most rational conclusion we can arrive at is, that there must be a primodial intelligent cause for these movements of the different inert parts of matter.

Whatever the molecular motion of the different forms of matter may be, in their different conditions of temperature, no material substance, great or small, has ever transferred itself, by its own inherent power, from one place to another.

There may be long lines of successive forces behind the final motion, but these have their origin in an ultimate and all controling power.

Materialistic science seeks this power in an uncreated and eternal energy, and all motion in the correlation of forces, without allowing mind, intelligence, or volition above these forces. But the strange and contradictory part of this theory is the admission that the energies on which materialistic science depends are grad-

ually passing away, and it can find no power in the universe by which they can be restored to action.

Professor Henry Drummond, in his "Natural Law in the Spiritual World," says: "With the gradual aggregation of mass the energy of the universe has been slowly disappearing, and this loss of energy must go on until none remains. There is, therefore, a point in time when the energy of the universe must come to an end." The theist—the believer in the supernatural may inquire: What then? What will come after the final ending of Nature's energies? On this subject Prof. Tyndall in his "Heat a Mode of Motion," p. 124, says: "To create or annihilate energy is as impossible as to create or annihilate matter; and all the phenomena of the material universe consists in transformations of energy alone. The principle here enunciated is called the law of the CONSERVATION OF ENERGY." Here are two positive statements made by two distinguished writers, claiming to be guided by the teachings of science, making statements plainly contradicting each other. How are

we to understand these conflicting statements? They cannot both be right. They must be the result of guessing. One guessed one thing in the name of science and the other guessed in another direction, and both claim progress in scientific discoveries, and with all these different and ever changing views they demand the teachings shall be made to conform to these ever changing views, which cannot harmonize with themselves.

HOW THE MEMORY MAY BE IMPROVED.

Without memory our lives would be a dreary waste. The past would be a blank. The present a fretful and perplexing hour. Without a recollection of the past we would find very little encouragement in looking into the future. With the storehouse of our memories well filled with past events, many pleasant scenes of our past lives are brought in review before us. Even our sufferings and disappointments, when recollected in connection with the relief that may have come to us, and our deliverance from

the apparent accidents and dangers to which we found ourselves exposed, all have a tendency to encourage us for the future. A recollection that the same or similar help may come to us in the future that sustained us in the past will enable us to move forward in the struggles of life and trust in the same powers and forces for protection that sustained us in the past. All persons are endowed with this faculty, but some in a much higher degree than others. While there are natural endowments, and some have much better memories than others, it is undeniably true that by neglecting to exercise and cultivate this faculty it becomes enfeebled, while, on the other hand, by a proper course of training and a systematic exercise, the memory may be strengthened beyond the highest conceptions of those who have not made suitable and systematic efforts in this direction. The reason why many persons in advanced years complain of a feeble memory is an inattention to the common concerns of life, and a want of effort to treasure up the ordinary occurrences. The idea of many that because they

have lived a certain number of years and arrived at an age where the mental faculties generally become enfeebled, has caused many to feel prematurely old, and a general loss of bodily and mental vigor follows a determination that it must be so, because it is the natural order of things. Many live and finally go down to their graves without being aware of the wonderful undeveloped powers they possessed, which, if they had been properly cultivated, would have contributed much to the support of the physical organism There is such an intimate connection between the body and the mind that the lack of a proper treatment of the one will unfavorably affect the other.

We have gymnastics for physical culture and find, from experience and observation, that much is gained by a proper exercise in muscular development.

The memory is more susceptible to improvement by proper exercise and training, than the body. It is that which possesses the body, and is destined to survive its final dissolution and decay. The dweller in the house

is of more importance than the house, so the mind of man, of which memory is a part, is of more importance than the body in which it dwells.

We talk of a mind well stored with knowledge, but we must not forget that memory is the storekeeper, and not only holds the key to the storehouse, but arranges all the shelves and drawers and the different compartments for storing away the treasure accumulated by mental efforts. The mind selects and brings in the treasures, sometimes secures them by hardest toil and perilous efforts. The memory takes the treasures and stores them away on different and appropriate shelves, or in different drawers, and so marks them and the place where they are deposited, that they can be looked at any time when they are wanted.

What advantage would we have in the accumulation of wealth in silver and gold and diamonds and other precious things that make men rich, if we brought them home and handed them over to our steward or servant for safe keeping, and he put them where they never could be found? Suppose a

man had millions on millions of treasures hidden in this way that he nor no one else could ever find; what advantage would they be to him? None. He might say I have lost them because I have not provided a proper place to store them away. I had no systematic arrangement in my treasure house, and now they are forever beyond my reach. In this way, from a want of a properly arranged house to store away the treasures of the mind thousands of precious gems have been lost. We may deeply regret the loss, but this will not return to us the lost treasures. The only safe and proper way is to guard against these losses in the future. Why have safes with various compartments been invented, with bars and bolts and locks, but to protect our goods from the hands of the thief and the robber, and also with a view to have them at our command at a moment's notice for our use?

The thief of time is watching us every hour to snatch away the accumulations for our mental toil. Much has been taken from us and laid in the grave of oblivion, but there are still vast outlying fields where we can

gather more, and there are means provided to keep our gathered treasures securely.

But someone advanced in years may say, "I am too old to commence building a storehouse to treasure up my mental wares." You need not build a new house. The old one is good enough if you will only go to work and make some repairs; and when you begin this repairing process you will be surprised to find how easy the task will be. The sweeping out of a few dark corners of the old building will soon throw light over other parts.

The opening of a few windows will let in the light and make everything cheerful about the old homestead where the higher nature has long dwelt in gloom and sadness because the house was so much out of repair.

How sad it is to think that thousands of persons, when they arrive at the age of forty-five or fifty years, think that their time of improvement is past, and under this impression they neglect mental culture, and with this neglect the body soon becomes like a house uncared for.

We build the house we live in, that is, our inner and higher nature to such an extent controls organic matter so as to build up and nourish those parts most suited for mental activity, where no other abnormal or disturbing agencies interfere. This is especially true in reference to the growth and development of the brain, which is the seat of mental power. Proper training not only improves the mind but enlarges the dwelling place where the mind resides, acts and operates.

The bright, expressive and speaking eye; the elevated forehead; the intelligent features; all indicate an intelligent working power or force superintending the material organization. This working force in the intellectual realm is under the control of the human will. If we determine that the mind shall lie dormant and the memory shall become feeble and inactive from a want of proper exercise, the inevitable results will follow. On the other hand, if we determine that the memory shall be retentive, and that the shelves in our memory's storehouse shall keep our deposited treasures, we have only to keep these

shelves and drawers in good order, and have our deposits so marked and labeled as to find them at any time we may wish to use them. If we can not immediately find the key to unlock our repository and find the gems of thought, and all the beautiful and useful things of the past, we must tie a string to the treasure and keep the string in view, and when we get bewildered and confused we can follow up the string or wind it up into a ball, till it leads up to our repository, and to the very drawer or shelf where our treasures may be found. If we have many shelves in memory's storehouse, and a great variety of different things stowed away, and these of different qualities, and require many strings by which to trace our way to our hidden treasures, we can very easily attach a mark or place a label on the end of each string, each separate mark directing us to the object we wish to find.

There are many plain and simple things that the mind may be placed on, and that the memory can retain, that may be well compared to a single thread, and by association of one thing

with another, either from a striking similarity or dissimilarity, the thread may be followed by winding it into a ball or unwinding it from a ball.

As an illustration of following up the thread, we will commence with a white woolen thread. The wool leads up to the sheep. The sheep is an emblem of innocence; here we come into a large field, innocence, playfulness, pastures, flocks, woolen garments, cold weather, blankets, carpets, and ornamented parlors. Or, if we wish to run in another direction, the thread will lead us to mutton, to a good dinner; to the dinner party; to the names of those present; to their conversation; and many other things we may wish to bring in review before us.

A silk thread will lead us to the silkworm, the mulberry tree, the manufacturing establishment, the silk dress, the beautiful lady that we saw wearing it, her sparkling eye, her wit, her diamonds, her language, home, fortunes or misfortunes, all from the end of a small silk thread.

A cotton thread will lead us to the cotton fields, the spinning and weaving, the factory girls employed in the

mills, the great variety of cotton goods, the sails of ships, a trip across the ocean, the commerce of different and distant countries, the ties that bind nations in one common brotherhood.

A linen thread will conduct us back to the field where flax grows, to the spinning and weaving of linen, to Irish linen, to the thousands of toilers who produce the beautiful fabric, to the weaver of the linen, to the rags of worn out garments, to the paper mill that manufactures the rags to paper, to the beautiful white letter paper on which our correspondence to loved ones may be written.

A hemp string leads to the fields, the rope-walks where it is manufactured into cords and ropes, to the rigging of a ship, hauling and directing the sails, carrying the commerce of the world to their destined ports.

A red, or scarlet thread, will lead us to something fiery or intense, ardent, high tempered, wars and bloodshed, or such things as will incite or inflame the passions.

A blue thread will lead one's mind up to the pale blue sky, in which the clouds are floating and behind which

the stars and planets appear to us to be pursuing their nightly march; we think of distance and magnitude, of time measured off by their revolutions, and in bewildering amazement we are led to the infinite Power that controls and directs all things from an infinite purpose.

A white thread is the emblem of innocence and purity; it leads us to the lily of the valley, flourishing near by the Rose of Sharon. This will bring to the mind a train of beautiful and lovely things. How delightful in the stillness of the night to take hold of the beautiful white thread and begin to wind it up into a ball or follow it back along the path we have traveled until we get back to the days of youth and childhood, and have the innocent amusements of our younger years pass in review before us.

The tear of sorrow may start from the eye at the recollection of friends long since gone from us, but even this opening of the fountains of affection may bring relief in the hour of affliction.

A black thread may lead us into the dark, but darkness is not always dis-

mal. It is necessary for us as well as light. Long winter evenings bring us many comforts that we could not have under the rays of the burning sun. It is true we might travel along the line of a dark thread into dismal and gloomy regions, but we should always prefer to go along the line of the pleasant and the beautiful, to feed the memory on that which will give us higher views of our lives and destinies.

The questions may arise in the minds of some, "What will be the advantage of all this?" "What can I do without an active memory to follow up these different threads?" We can easily see where the advantage of such a mental exercise is found. It is an effort to build up and strengthen the memory, or prepare the different shelves in this storehouse for repositories of our mental wares. Instead of leaving the mind a vacant blank and tossing restless upon our beds in the stillness of the night, we may start the wheels of memory running backward over the past, and stop at the different way stations with such delight and pleasure that we will soon be lulled to sleep, perchance to dream

some pleasant dreams, and awake with better opinions of life than when our minds were blank and the shelves of our memories' storehouses in a dilapitated condition.

Now we would advise anyone in lonely hours to take hold of the end of a string, one of those we have referred to; the white for instance, and start back in a contemplative mood and stop to linger awhile, around every point of innocence, beauty and purity. Then let it stretch out into the future. Follow it up and on until it reaches within the very gates of the celestial city, or, if you do not wish to go quite so far just now, then take another thread and follow it along the line of which it is emblematical. Do not hasten too fast from one point to another. When you find some event in your past life, linger around it as long as pleasant memories continue to come up, in groups or single, and then pass on to other points; and in this way the scenes of the past will come up in succession as old associates that had appeared lost to you, and entirely faded from your memory. To those who have never made an effort to recol-

lect the scenes of the past by such associations it will be surprising to find the mind pictures like beautiful panoramas pass in review before them.

The memory is like the blacksmith's arm, which has grown strong from using it. There is no faculty of the human mind so susceptible of improvement as the memory, and none so much neglected.

Some persons are naturally endowed with good memories, while others are deficient, and must depend on culture for improvement.

Before letters were invented for the purpose of recording the events of life and our historic narratives, the memory must have been much stronger than it is now. The transactions and constantly recurring events of life had to be carried in the memory instead of recorded in books.

Many of the historical narratives now found in books of history, both sacred and profane, must have been preserved in the storehouse of memory for ages before they were permanently recorded in books now found in our libraries.

There are many marvelous instances

on record of extraordinary memories among the ancients. It would be out of place here to enter into a detailed account of the different prodigies of memory. Speeches were committed from once having been heard, lectures, poems, and the most difficult problems the human mind can grapple with, have been retained in the memory from having only once heard them repeated. But these are rare instances, and not a common inheritance of mankind. The amount of memory we have is a natural endowment, or a working capital on which we can improve to a marvelous extent. With every advancement we make we increase our stock in trade, and add to our wealth which no thief can steal, and no wreck of earthly fortune can destroy.

APPENDIX.

The object of the preceding pages is, to illustrate some of the great vital forces of nature, and their relation to the Supreme Power, and their application to the needs of the human race. This has led me to advance some new

views on the subject of solar radiation and electricity.

I will now add a few plain directions to those who desire long life and good health in old age.

If persons would be more careful in their habits of living, especially in eating and drinking and proper exercise, our physical organism would perform its functions with a more uniform regularity; and as there is such a close relation between the mind and the body, our mental powers would also be greatly increased.

As soon as persons come to the conclusion that any disease brought on by exposure, or irregular habits of living, can soon be cured by the advertised medicines, we may take it for granted that such persons are on the way of a speedy breaking down. Repeated attacks brought on by needless exposure will soon prostrate the system. Relief may be obtained from remedies for a time, but by this process the years will be shortened, and much suffering will be the result. Here again the mind controls the body, and by a wrong direction, the body soon falls a victim to that controlling and directing thing called the human will.

In addition to the matters above referred to, there are others things, equally important to good health, and long life.

This is a moving world, although it cannot be considered a self-acting world. Human beings are both moving and self-acting, by a decision of the will. Action within proper bounds promotes health, while the want of action causes disease.

There is such an intimate relation between the nervous, muscular and vascular systems, and the cellular tissues, that a disturbance in any one of these affects the others.

If each of these could be separated from the others, and stand before us, we would have a complete representation of a human being in all its parts and forms. All are dependent upon the muscular structure for support and sustenance. Anything that has a tendency to produce a healthy condition of the muscular system will promote a normal and healthy action in the other departments of the human body.

Being fully aware of these facts, I was induced to commence experi-

ments upon myself. Such was my success in gaining strength and firmness in my muscles, that I concluded to formulate a regular system of muscular flexion in accordance with anatomical and physiological laws.

The result of this has been a perfect surprise to me.

DIRECTIONS FOR MUSCULAR FLEXION.

I am the first one, so far as I know, to introduce this system of muscular flexion for health and strength, without putting an undue strain upon them, as in the ordinary gymnastic exercises.

The process is so plain and easy that anyone can engage in it without the loss of time or expensive apparatus.

The best position is lying on your back in bed or on a lounge. This is not a mere random jerking and slashing of the muscles, but a regular systematic movement to gain strength, without the possibility of exhaustion. If you would have the full benefit of this new system of muscular flexion,

you must carefully follow the instructions here laid down.

First, stretch yourself out at full length and press your limbs firmly down on the bed and extend your toes out as far as possible. You will now find the muscles of your limbs above the knees quite rigid. Hold this position a few seconds, then draw up the feet as far as possible, still pressing the heels and limbs firmly on the bed. Now move the feet regularly out and back a short time; the muscles will then in turn be rigid and relaxed.

From one to two minutes should be spent in flexing the muscles in each position. Next cross your limbs so that the outside of your left foot rests against the outside of your right foot, and continue the same movement as before, pushing out and drawing back the feet, and at the same time draw up and relax the muscles of the thigh and hips in quick succession. Frequently change this position from right to left, and left to right.

By practice the muscles of the entire system can be put in motion by pushing down one side and drawing up the other in succession.

The muscles of the arms and shoulders are flexed by throwing them out and drawing them in.

The muscles of the chest by deep respiration, thus expanding and contracting them alternately.

When the soothing and quieting, as well as the invigorating effects are once realized, it becomes a pleasurable task as well as a means of gaining strength to the entire system.

With persons debilitated by disease or old age, we commence with gentle and careful movements at first, and increase in activity gradually as the strength increases.

No matter how nervous you may be when you go to bed for a night's rest, before you get through with the first round of flexion you will go to sleep and rest quietly.

ADVANTAGES OF SYSTEMATIC MUSCULAR FLEXION.

One of the first indications of old age is the weakening of muscular power. It becomes very tiresome for an aged person to walk a long distance. There is a feeling of pressure on the back,

and especially over the shoulders. This causes a drooping of the shoulders, and a bending down of the body, as if laboring under a heavy burden. This is soon followed by an enfeebled condition of the arms and lower limbs. The person who walked with an elastic step and took hold of things with a steady and strong arm, now walks with slow and heavy step, bowed down under the infirmity of advanced years.

Some even feel symptoms of these changes soon after they have passed their fiftieth year. It is a sad reflection to think that many will yield to this state of things in comparatively early life without a proper effort to rescue themselves from what they consider their inevitable doom. Experiments upon myself warrant me in saying that there is hope and help for those who imagine themselves prematurely breaking down. The discovery of this systematic process of muscular flexion has given me more strength than I had some years ago. There is a great difference between a proper exercise of the muscles for strength and health by systematic flexion, and the ordinary methods re-

sorted to with "dumb bells" or pulling, pushing or lifting with "EXERCISE" for public or "home gymnasiums."

The strain on the muscles in all these exercises produces exhaustion of the muscular structure which has a depressing effect on the nerves, and there are many who have commenced these exercises with high expectations and finally abandoned them from an experience of the fact that the strength gained, in many cases, is not a sufficient compensation for the energy lost in these gymnastic "exercises."

Our aim is to introduce the invalid to a new method of physical culture, and to show how those in the ordinary enjoyment of health may increase their strength and retain it to a ripe old age.

Animal electricity is increased by proper muscular action. A writer in the American Cyclopædia says, "It is established beyond doubt that a production of electricity is constantly going on in all tissues of the living animal economy. The amount of electricity generated in the muscles must be exceedingly great." This is evidently increased by a proper course of muscular exercise.